ABSTRACT OF THE DISCLOSURE

Disclosed herein are a variable capacity rotary compressor and a refrigerant cycle system having the variable capacity rotary compressor. The compressor includes a cooling unit and a pressure reducing unit to reduce temperature and pressure of a bypassed refrigerant, thus allowing the bypassed refrigerant to have the same temperature and pressure as when entering a cylinder at first. The compressor includes the cylinder in which a refrigerant is compressed. An inlet pipe delivers the refrigerant into the cylinder. An outlet pipe delivers the refrigerant out of the cylinder. A bypass hole is provided at a predetermined position of the cylinder to bypass the refrigerant from the cylinder, thus varying a compression capacity. A bypass pipe connects the bypass hole to the inlet pipe to allow the refrigerant bypassed through the bypass hole to enter the cylinder. The cooling unit cools the refrigerant flowing through the bypass pipe. The pressure reducing unit reduces a pressure of the refrigerant which flows through the bypass pipe. Therefore, the refrigerant cycle system having the variable capacity rotary compressor prevents the operational efficiency of a refrigeration cycle from being reduced, in addition to preventing reduction of power consumption, even when the compressor of the refrigerant cycle system is operated in a small capacity compression mode.